

REMARKS

Claims 24-42, 76-98 and 105-106 are canceled. Claims 1-23, 43-61 and 99-104 are pending in the application.

Claims 24-42, 76-98 and 105-106 are canceled to reduce the number of claims pending in the application in the event of appeal. Applicant preserves the right to reintroduce such claims in a continuation application.

Pending claims 1-23, 43-61 and 99-104 stand rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of Cui (U.S. Pat. Publication No. 2004/0000321), and Au (U.S. Pat. Publication No. 2001/0010228); or over a combination of Cui and Au in further view of Rhieu,(U.S. Pat. No. 5,364,667). The Examiner is reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Each of these three factors must be shown, the burden of which is upon the Examiner, in order to establish a prima facie case of obviousness. Claims 1-23, 43-61 and 99-104 are allowable over the cited combination of Cui, Au and Rhieu for at least the reasons that the references, individually or as combined, fail to disclose or suggest each and every element in any of those claims and fail to cite a reasonable expectation of success.

Each of independent claims 1, 43, and 99 recite depositing an elemental form of silicon-comprising material on a semiconductor substrate. The Examiner indicates reliance upon Cui as disclosing placing a substrate in a chamber for silicon deposition (present Action at page 2), and indicates at page 5 of the present Action that Cui is not limited in scope to silicon dioxide formation. Referring to the Cui disclosure, such discloses generally “depositing a layer of material over the substrate” (paragraph 5). The only indication of any specific material is silicon oxide (paragraphs 1 and 40). The Examiner essentially argues that the specifically recited elemental silicon-comprising material is within the range of materials disclosed by Cui. However, it is noted that the Cui disclosure of “material” has a range as broad as to encompass a very large number of possible distinct composition analogous to a broadly disclosed genus (see MPEP § 2144.05(I)). In accordance with MPEP § 2144.08, one of ordinary skill in the art would have to have been motivated by the prior art reference to select the claimed material (species) (“some motivation to select the prime species or subgenus must be taught by the prior art”). Since no motivation is provided by Cui, specific or otherwise, to select the recited elemental silicon-comprising material, claims 1, 43, and 99 are not rendered obvious by Cui.

Further, the only enabling disclosure for layer formation and subsequent cleaning by Cui is for a silicon oxide material (paragraph 40). Accordingly, Cui does not disclose or enable any material other than silicon oxide. Even if the Examiner’s statements regarding Cui being not limited in

scope to silicon dioxide formation were true, such is not the standard for patentability. The reference must teach or suggest what is recited in the claim. Nowhere does Cui teach or suggest elemental form silicon-comprising material specifically recited in each of the independent claims of the present application. The Examiner indicates reliance upon Cui's disclosure of CVD and semiconductor formation as suggesting other materials (present Action at page 5). However, the disclosure of a method does not suggest any material. Nor does the broad disclosure of a formation disclose or suggest any particular material(s). Accordingly, the contention of the Examiner is without basis.

Neither of Au or Rhieu disclose or suggest, or contribute toward suggesting, the depositing of an elemental form silicon-comprising material over a semiconductor substrate as recited in each of the independent claims. Nor are these references relied upon for such by the Examiner. Accordingly, as combined, the Au, Rhieu and Cui combinations fail to disclose or suggest each and every element in any of the independent claims.

In addition to the above, each of claims 1, 43, and 99 recites generating a plasma effective to remove at least some of a deposit or a residue from a wall within the chamber after depositing the elemental form silicon-comprising material. The Cui disclosure of removal and cleaning after silicon oxide deposition does not provide a reasonable expectation of success for the recited removal of residue after depositing an elemental

form silicon-comprising material on a semiconductor substrate. Nor do the Au or Rhieu disclosures contribute toward providing such a basis for a reasonable expectation of success. Accordingly, the prima facie case of obviousness has not been established relative to claims 1, 43, or 99.

Since the prima facie case of obviousness has not been established relative to independent claims 1, 43, and 99, such claims are allowable over the cited art combinations. Dependent claims 2-23, 44-61, and 100-104, are allowable for at least the reason that they depend from corresponding allowable base claims 1, 43, and 99.

For the reasons discussed above, claims 1-23, 43-61 and 99-104 are allowable. Accordingly, Applicant respectfully requests formal allowance of such pending claims in the Examiner's next action.

Respectfully submitted,

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